# Grant Narrative for Lake Tahoe Region Biomass Energy Facility Technology Integration and Preliminary Design Placer County FY 2012

### Lead Contact(s):

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# Purpose:

Wildfire suppression efforts in the past century have contributed to a significant buildup of vegetation in western forests—and in this case, specifically within the Lake Tahoe Region (LTR). This unnatural accumulation of hazardous fuels represents a serious threat to forest ecosystems and communities. During the past 10 years, the LTR has experienced wildfire events on approximately 4,500 acres. Because much of the LTR is accessible by road and that the local fire response infrastructure is well equipped and highly organized, most wildfires have not exceeded 100 acres in size. However, the Angora Fire of 2007 was an exception, consuming 3,100 acres and 254 homes over the span of 48 hours. This is an indication of the potentially extreme wildfire threat that exists in the region.

Fire and land management agencies operating within the LTR have crafted a 10-year fuel reduction and wildfire prevention strategy<sup>1</sup>. This document sets general plans and goals for coordinated fuels treatment activities. This strategy is currently being implemented and fuels reduction projects, primarily thinning, have increased. Forest management projects typically include piling and burning of excess biomass material generated from the projects. Diversion of this material for use as fuel in the controlled combustion system at a proposed biomass facility will result in a significant<sup>2</sup> decrease in air emissions including both greenhouse gases and particulates.

To develop a sustainable relationship to utilize the woody biomass created by the USFS, Placer County proposes to construct a 2 megawatt forest-sourced biomass energy facility in the Lake Tahoe. Region with our partner California-Pacific Electric Company (Calpeco). The project would include construction of a structure to house electric power generation equipment and an adjacent covered materials storage area that is sustainable using forest-sourced woody biomass in the region. Our project would provide valuable support to two of the States Goals from the 2010 Strategic Fire Plan for California

Goal 3: Support and participate in the collaborative development and implementation of wildland fire protection plans and other local, county and regional plans that address fire protection and landowner objectives.

<sup>&</sup>lt;sup>1</sup> Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy, December 2007

<sup>&</sup>lt;sup>2</sup>Springsteen, B., T. Christofk, S. Eubanks, T. Mason, C. Clavin, and B. Storey, Emission reductions from woody biomass waste for energy as an alternative to open burning, Journal of the Air and Waste Management Journal, Volume 61, pp. 63-68, January 2011.

Goal 5: Develop a method to integrate fire and fuels management practices with landowner priorities and multiple jurisdictional efforts within local, state and federal responsibility areas.

## Scope of Work:

This project will allow Placer County to move forward towards the construction of a small (2MW) woody biomass combined heat and power facility in the Lake Tahoe Region. The region is located within Placer County but would serve the areas in two other California counties and three Nevada counties. Several technical, environmental and economic analyses have been performed to date from a Department Of Energy (DOE)/Placer County Grant. With those preliminary results we will soon decide to choose a final technology and site location. The project team will utilize this Woody BUG grant funding to complete the integration of that technology with the preliminary and Intermediate design of the building on the chosen site including all of the details regarding operational and maintenance activities (information on supply chain to PPA and interconnects issues for the life of the system will be performed concurrently in our DOE grant work).

# Our objectives are to:

- 1) Complete a preliminary (30%) site design plan for Permit Acquisition
- 2) Complete a preliminary and intermediate technology integration design
- 3) Complete an intermediate (60%) site design plan for a "constructability" review
- 4) Complete a final report detailing conclusions and outstanding issues for final design

Because of the reduced funding and scope of this grant, Placer County intends to use the services of Wood Rodgers to perform the preliminary site design drawings, plans and outstanding issues report and TSS Consultants to perform the technology integration design issues and final reporting. We are allowed by County procedure to request sole source procurement for these types of activities in which we have a qualified company that has considerable project specific background. In both of these cases these contractors have been working with our team to develop this project and are on our qualified list of vendors. For the preliminary design portion and the technology integration portions of the project we will seek the sole source contracts. When the project moves to the intermediate and detailed design phase Placer County will prepare a formal Request for Proposal (RFP) for those larger services.

Placer County and its team will provide a preliminary site and building design integrating the chosen technology which will be used to serve as the project footprint to allow for environmental and agency permitting approvals to move forward. Interim reports will document the tradeoff decisions and design details of the project. Next the County team will produce Intermediate design and integration plans which will support preliminary cost estimate and will serve to allow stakeholders an opportunity to perform a "constructability" review. A final report will be developed to detail all integration issues and remaining tasks to complete a final design phase to bring the project to the bid and construction stage.

## Methodology and Timeline:

The Placer County team will utilize the information from the Placer County DOE preliminary technology, economic and environmental analyses to choose both the proposed technology and site location for the project. The team will then move forward utilizing these grant funds to prepare all of the preliminary plans which can be used to provide all permitting agencies the necessary information to entitle the proposed facility. Next the intermediate design and technology plans will follow and conclusions of the team will be produced to facilitate the final phases of the project. Once that is achieved (the results of this grant project) Placer County could then go forward with the detailed design, construction and operational mode of the facility.

The project's objectives will be accomplished through the following activities. The work will be completed primarily by contractors performing design and integration tasks, working in partnership with Placer County and Calpeco personnel. Placer County expects to bill on a quarterly basis by delivering interim reports for USFS approval of the activities described below. We will include all billable and in-kind hours of our contractors and county/Calpeco team personnel with each report. Upon the conclusion of all activities Placer County will also submit for USFS approval the final report including all activity associate with this grant.

The Lake Tahoe Region Biomass Energy Facility Technology Integration and Preliminary Design project will begin on October 1, 2011 and be completed by September 30, 2012 or earlier. A more specific timeline is as follows:

Oct/Nov/Dec 11	Jan/Feb/Mar 12	Apr/May/Jun 12	Jul/Aug/Sep 12	Closeout 2012
Choose Site/Preliminary Design site plan Creation/ Complete Preliminary site plans	Integrate Technology into site plans/Develop Intermediate Site Plans	Complete Intermediate site plans	Document Plans/ provide outstanding issues and required information for detailed design facets	
Choose Technology/ Complete Preliminary Technology Integration plans	Develop Intermediate Technology Integration plans	Complete Intermediate Technology Integration plans	Document technology integrations plans/prepare air permitting requirements plans	
Interim Report	Interim Report	Interim Report	Interim Report	Final Report

**Budget:** 

The following budget is prepared directly from our SF424A.

Budget Items by SF 424A Object Class Categories	Federal \$	State Match \$	Other - Match \$	Source of "Other Match"
a. Personnel				•
Consultant In-kind work			5,000	TSS Consultants
Consultant In-kind work			5,000	Wood Rodgers
Consultant In-kind work			25,000	Calpeco
Admin Staff			1,675	Placer County
b. Fringe Benefits				
Admin Staff			825	Placer County
c. Travel				
[Specific Budget Item]				
d. Equipment				
[Specific Budget Item]				
e. Supplies				
[Specific Budget Item]				
f. Contractual	,			
Preliminary Design	45,000			Wood Rodgers
Preliminary and Intermediate Integration	10,000			TSS Consultants
Intermediate Design	95,000			TBD (winning contractor)
g. Construction				
[Specific Budget Item]				
h. Other				
[Specific Budget Item]				
i. Total Direct Charges (sum of a-h)	150,000		37,500	
j. Indirect Charges				
k. Totals (i + j)	150,000		37,500	
I. Program Income				